

[0079] CSI RS should be dense in frequency domain (e.g. 2 RSs per PRB and AP)

[0080] Time domain issues:

[0081] exploit large expected coherence time as far as possible

[0082] special solution for potential seldom fast moving objects like passing cars

[0083] special solution for CSI variations due to mechanical swings of RN or eNB

[0084] adaptation to long term variations of the channel conditions, e.g. due to trees with and without leaves (summer/winter)

[0085] effective reporting of noise like channel fluctuations, e.g. from tree reflections with moving leaves

[0086] minimizing noise effects.

[0087] It should be noted that the term “comprising” does not exclude other elements or steps and the “a” or “an” does not exclude a plurality. Also elements described in association with different embodiments may be combined. It should also be noted that reference signs in the claims should not be construed as limiting the scope of the claims.

[0088] Further the examples and embodiments should not be construed as limiting the scope of the claims. Further, many variations are possible without leaving the scope of the appended claims.

LIST OF REFERENCE SIGNS

- [0089] 100 channel transfer matrix
- [0090] 101-104 portions of channel state information
- [0091] 105 decomposition
- [0092] 210 lamp post
- [0093] 211 oscillation
- [0094] 212 oscillation
- [0095] 213-215 diagrams of channel transfer function
- [0096] 220-225 timely course of CTF coefficient,
- [0097] 330-333 predicted CIRs
- [0098] 334-338 measured CIRs
- [0099] 340-343 differences predicted-measured CIRs
- [0100] 344 short term fluctuations

1. A method of reporting channel state information from a network element to a further network element of a communication network, the method comprising:

decomposing the channel state information into different portions wherein the different portions correspond to channel state information varying on different time scales; and

reporting at least one portion of the decomposed channel state information to a further network element.

2. The method according to claim 1, further comprising coding the decomposed channel state information into a channel state information reporting message before transferring the decomposed channel state information to the further network element.

3. The method according to claim 1, further comprising determining information indicative of a channel state.

4. The method according to claim 3, further comprising processing the information indicative of channels state information to determine the channel status information.

5. The method according to claim 3, wherein the determining of the information indicative of a channel state is performed at intervals having lengths which are different for the different portions.

6. The method according to claim 1, wherein a number of the different portions is between 2 and 6.

7. The method according to claim 5,

wherein a number of the different portions is four,

wherein a first portion relates to long term channel state information, a second portion relates to short term channel movements, a third portion relates to moving objects and a fourth portion relates to short term fluctuations of the channel state.

8. The method according to claim 1, further comprising: suppressing the reporting of at least one portion of the decomposed channel state information.

9. The method according to claim 1,

wherein the coded channel state information is an incremental channel state information.

10. A network element for performing channel state information reporting in a communication network, the network element comprising:

a processing unit; and

a transmitting unit;

wherein the processing unit is adapted to decompose channel state information into different portions wherein the different portions correspond to channel state information varying on different time scales; and

wherein the transmitting unit is adapted to report the decomposed channel state information to a further network element.

11. The network element according to claim 10, further comprising a scheduler,

wherein the scheduler is adapted to perform a scheduling, wherein the different portions are scheduled according to different feedback types.

12. A method for obtaining channel state information from a network element of a communication network, the method comprising:

receiving decomposed channel state information; and

obtaining channel state information by back composing the received decomposed channel state information.

13. A method comprising:

implementing a communication protocol for a communication network,

wherein the communication protocol is adapted to support a message format including decomposed channel state information reports.

14. The network element of claim 10, wherein the network element is adapted to code the decomposed channel state information into a channel state information reporting message before transferring the decomposed channel state information to the further network element.

15. The network element of claim 10, wherein the network element is adapted to determine information indicative of a channel state.

16. The network element of claim 15, wherein the network element is adapted to process the information indicative of channels state information to determine the channel status information.

17. The network element of claim 15, wherein the network element being adapted to determine information indicative of a channel state comprises the network element being adapted to determine, at intervals having lengths which are different for the different portions, the information indicative of a channel state.

18. The network element of claim 10, wherein the, wherein a number of the different portions is between 2 and 6.